

FIGS. 3 and 4 illustrate wall elements 3 and 3' which are designed in accordance with the invention.

[0049] Pursuant to the sectional illustration in FIG. 1 the roof structure 2 comprises a roof covering 21 and a sub construction 22 therefor. Therebelow is positioned a sarking membrane 23 which covers an over rafter insulation formed of heat insulating elements 4. At the outer side the over rafter insulation rests on rafters 24 between which a between rafter insulation 25 is disposed. A vapor barrier 26 and a sheathing 27 form the inner-side termination.

[0050] Each heat insulating element 4 comprises an insulating body 41 of mineral wool and a capillary-active fabric, in particular a fleece 42 of glass fibers. The fleece 42 is laminated on the insulating body 41 and is available at the outer side in the direction of the sarking membrane 23.

[0051] In the illustrated embodiment the sarking membrane 23 comprises a defect S through which moisture may penetrate onto the over rafter insulation.

[0052] For comparison, FIG. 2 illustrates the conventional roof structure D which differs from the structure of the building construction pursuant to FIG. 1 only by the fact that, instead of the heat insulating element 4, a conventional, non-laminated mineral wool plate is disposed as an element of the over rafter insulation. Also in the arrangement pursuant to FIG. 2 a defect S is available in the sarking membrane.

[0053] As is shown in the illustration in FIG. 2, moisture enters through the defect S into the mineral wool of the over rafter insulation and damages the structure thereof. The moisture distributes conventionally in correspondence with the usual behavior of water substantially in a drop-shaped manner and is accumulated in the region of the defect S. Therefore, the water can dry only very slowly.

[0054] In the roof structure 2 in accordance with the invention pursuant to the illustration in FIG. 1 the insulating body 41 is, on the contrary, laminated with the fleece 42 which is of capillary-active design. The water entered through the defect S distributes along the fleece 42 and covers accordingly a larger area than in the state of the art. No water accumulation as it is known from the state of the art will occur. For this reason, the moisture dries from the heat insulating element 4 substantially more quickly and diffuses on a large face to the outside through the sarking membrane 23.

[0055] FIG. 3 illustrates a section through the wall element 3 of the building 1 which is provided with an exterior insulation. It comprises at the inner side a plaster layer 31 which is applied on a supporting wall 32. At the outer side there follows the exterior insulation of heat insulating elements 4. The insulating body 41 rests on the wall 32 while the capillary-active fleece 42 laminated thereon is arranged on the side of the insulating body 41 which faces away from the wall 32. On the fleece 42, finally, an exterior plaster 33 is arranged.

[0056] The illustration in FIG. 3 further illustrates by means of a line A the temperature profile in the wall element 3 during the heating period across the wall thickness. With the line B the dew point in the wall element 3 is further illustrated. Since the insulating plane of this exterior wall insulation is available outside of the wall 32, no accumulation of condensation water will occur here as a rule.

[0057] It is, however, possible that the exterior plaster 33 is damaged due to external influences or the like and that moisture may thus penetrate into the wall element 3. There,

however, this moisture encounters first of all the capillary-active fleece 42 which distributes the moisture directly to a larger face and thus favors the drying thereof. Since the moisture entry typically takes place here and there and only in the case of rain showers, for instance, the time of rain breaks will frequently suffice to achieve a uniform dissipation of moisture across a larger area into the exterior plaster and thus to the environment. Damage of the insulating body 41 can thus be avoided reliably.

[0058] FIG. 4 shows the wall element 3' provided with an interior insulation. Here, too, a plaster layer 31' is available at the inner side, which is, however, followed by the interior insulation formed of heat insulating elements 4. The insulating body 41 is positioned adjacent to the plaster layer 31' while the capillary-active fleece 42 is arranged at the side of the insulating body 41 which faces a wall 32'. At the outer side the wall structure is terminated by an exterior plaster 33'.

[0059] Also in this illustration is the temperature profile through the wall element 3' shown by means of a line A'. Likewise, the dew point is plotted by means of a line B'. As is shown in the illustration, the temperature drops strongly within the interior insulation while it experiences only little cooling in the wall 32'. The wall 32' is available outside of the insulating plane, which results in that condensation water may accumulate at the boundary surface between the wall 32' and the fleece 42 especially during the heating period. Conventionally, the condensation water would accumulate in this area especially at corners and places of joint, and would lead to mold formation or the like.

[0060] By the capillary-active fleece 42 possibly existing moisture is, however, distributed across a large face, so that it can dry easily and quickly. This takes place through the diffusion-open insulating body 41 via the plaster layer 31' into the interior of the building 1.

[0061] FIG. 5 illustrates a perspective view of a portion of the heat insulating element 4. In the foreground, the capillary-active fleece 42 is illustrated, which is only laminated on a large face on the insulating body 41. As a fleece 42 the product known under the brand name EVO 170 is used.

[0062] In the illustrated example the heat insulating element 4 rests against a corner region, for instance, in a window reveal where condensation water T accumulates. The water accumulates directly in the corner, but is then sucked in by the capillary-active fleece 42 and distributed across a larger face F. From there it may dry quickly and may be discharged through the diffusion-open insulating body 41.

[0063] Laboratory tests concerning the drying behavior in the corner region of a window reveal as a "worst case" scenario have shown that in this manner a quite substantial acceleration of the drying process may be achieved. FIG. 6 illustrates in a diagram the drying period in hours, wherein a sample with a fleece 42 is plotted with the line M and a sample without the fleece 42 with the line O. The drying period was ascertained by determining the change in mass of the sample since this proceeding appeared suitable to be able to reliably ascertain the remaining moisture content of the sample. The qualitative difference between the sample with the fleece 42 and the sample without the fleece 42 can be recognized directly.

[0064] The success of the distribution of moisture on a large face depends predominantly on the capillarity of the fleece 42. The suction distance and the suction velocity of